Amendments to the Claims

The listing of claims will replace all prior versions of claims in the application.

1. (Previously Presented) An injection molding hot runner nozzle comprising:

a nozzle having a nozzle body with a melt channel extending therethrough;

at least one electric heater, said at least one electric heater wound spirally around and embedded within said nozzle to provide heat to said melt channel; and

at least one temperature sensor, said at least one temperature sensor wound spirally around and embedded within said nozzle to sense a temperature of said melt channel;

wherein said at least one electric heater and said at least one temperature sensor are embedded within said nozzle body for substantially the entire length each is wound spirally around said nozzle.

2. (Original) The injection molding hot runner nozzle according to claim 1, wherein said at least one temperature sensor is a thermocouple.

3. (Previously Presented) The injection molding hot runner nozzle according to claim 1, wherein said at least one electric heater and said at least one temperature sensor are wrapped around substantially the same portion of said nozzle body in a substantially similar path.

4. (Previously Presented) The injection molding hot runner nozzle according to claim 1, wherein said at least one electric heater and said at least one temperature sensor are substantially equidistant from a centerline of said melt channel.

5. (Original) The injection molding hot runner nozzle according to claim 1, wherein said at least one electric heater and said at least one temperature sensor are separated by a dielectric material with good heat conductance.

6. (Previously Presented) An injection molding system comprising:

an injection manifold having at least one manifold melt channel;

at least one injection molding nozzle having a nozzle body with a nozzle melt channel in fluid communication with said at least one manifold melt channel;

at least one heater wire element spirally wound around said nozzle; and

at least one thermocouple wire element spirally wound around said nozzle;

wherein said at least one heater wire element and said at least one thermocouple wire element are embedded within said nozzle for substantially the entire length each is spirally wound around said nozzle.

7. (Previously Presented) The injection molding system according to claim 6, wherein said nozzle includes a first insulating layer and a second insulating layer.

8. (Previously Presented) The injection molding system according to claim 6, wherein said at least one heater wire element and said at least one thermocouple wire element are substantially equidistant from a centerline of said melt channel.

Claims 9-17 (Cancelled).

18. (Currently Amended) An injection molding apparatus comprising:

a nozzle having a nozzle body with a melt channel extending from a first portion adjacent a manifold to a tip portion adjacent a mold cavity;

at least [[on]] <u>one</u> electric heater, said at least one electric heater wound spirally around said nozzle body from the first portion to the tip portion thereof to provide heat to said melt channel;

at least one temperature sensor, said at least one temperature sensor wound spirally around said nozzle body from the first portion to the tip portion thereof, wherein said at least one electric heater and said at least one temperature sensor are substantially equidistant from a centerline of said melt channel from said first portion to said tip portion.

19. (Previously Presented) The injection molding apparatus according to claim 18, wherein said at least one heater wire element and said at least one thermocouple wire element are embedded in said nozzle body.

Claims 20-23 (Cancelled)

24. (Previously Presented) An injection molding hot runner nozzle comprising;

a nozzle having a nozzle body with a melt channel extending therethrough;

at least one electric heater, said at least one electric heater wound spirally around said nozzle body to provide heat to said melt channel;

a first insulating layer disposed on an exterior side of said heater relative to said melt channel; and

at least one thermocouple wire element wound spirally around said nozzle body, wherein said thermocouple wire element is embedded within said insulating layer for substantially the entire length said thermocouple wire element is wound spirally around said nozzle body.

25. (Previously Presented) The injection molding hot runner nozzle according to claim 24, wherein said heater and said thermocouple wire element are laterally spaced from each other.

26. (Previously Presented) The injection molding hot runner nozzle according to claim 24, wherein said nozzle body includes a second insulating layer disposed to an interior side of said first insulating layer.